



Revision: 3

Purchasing Agent: David Gill

Phone: (801) 538-3254

Email: [dgill@utah.gov](mailto:dgill@utah.gov)**Item: ITS / ADVANCED TRANSPORTATION CONTROLLERS-TYPE 2070**

Vendor: 91807A Gades Sales  
P.O. Box 12125  
Ogden, UT 84412

Remit to: P.O. Box 9003  
Wichita, KS 67277

Internet Homepage: [www.gadestraffic.com](http://www.gadestraffic.com)

Contact: JOHN COLEMAN  
Telephone: (801) 710-5288  
Fax number: (801) 340-070  
Email: [jjcgades@aol.com](mailto:jjcgades@aol.com)

Brand/trade name: Siemens / Eagle

Price: SEE ATTACHED PRICE LIST  
Terms: NET 30  
Effective dates: 07/8/03 through 07/08/08  
Potential renewal options remaining: NONE  
Days required for delivery: 45 TO 60 DAYS ARO  
Price guarantee period: ONE YEAR  
Minimum order: ONE UNIT  
Min shipment without charges:  
Other conditions:

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**Revision #3: Price updates; contract extended through 7/08/2008.**

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BID NO. JG3173

This contract covers only those items listed in the price schedule. It is the responsibility of the agency to ensure that other items purchased are invoiced separately. State agencies will place orders directly with the vendor (creating a PG in Finet) and make payments for the same on a PV referencing the original PG. Agencies will return to the vendor any invoice which reflects incorrect pricing.



## PRICE SCHEDULE

1. ATC 2070L CONTROLLER	\$1,869.00 each
2. ATC 2070LC CONTROLLER	\$1,700.00 each
3. ATC 2070LCN CONTROLLER	\$2,974.00 each
4. ATC 2070 CONTROLLER	\$1,963.00 each
5. ATC 2070LC-TS2 CONTROLLER	\$2,011.00 each
6. ATC 2070-TS2 CONTROLLER	\$2,117.00 each
7. ATC 2070 APPLICATION SOFTWARE SEPAC	\$465.00 each
8. ENGINEERING FIELD SERVICES	\$175.00 per hour
9. 2070 Modules	
9.1 2070 Unit Chassis,	\$242.00 each
9.2 2070-1A CPU Module (multiple board) with VME interface and a minimum of 8 megabyte flash memory,	\$490.00 each
9.3 2070-1B CPU Module (single board / light version) with Ethernet port and a minimum of 8 megabyte flash memory,	\$598.00 each
9.4 2070-2A Field I/O Module with parallel inputs and outputs (for 170 Cabinets),	\$438.00 each
9.5 2070-2B Field I/O Module with serial bus communications (for ITS Cabinets),	\$155.00 each
9.6 2070-2N Field I/O Module with serial bus communications (for NEMA TS-2 Cabinets),	\$469.00 each
9.7 2070-3B Front Panel Module, 8x40 character display with keyboard and serial connectors,	\$329.00 each
9.8 2070-3C Front Panel Module, with serial connectors, without display or keyboard,	\$145.00 each
9.9 2070-4A Power Supply Module, 10 Amp,	\$438.00 each
9.10 2070-5A VME Cage Assembly and installation kit,	\$225.00 each
9.11 2070-5B Mounting Assembly for MCB (2070 -1A),	\$67.00 each
9.12 2070-6A Dual Async/Modem Serial Comm, 300-1200 Baud FSK,	\$438.00 each
9.13 2070-6B Dual Async/Modem Serial Comm, 9600 Baud FSK,	\$481.00 each
9.14 2070-7A Dual Async Serial Comm, RS-232, DB-9S,	\$188.00each
9.15 2070-7B Dual Async Serial Comm, RS-485, DB-15S,	\$225.00 each
9.16 2070-8 NEMA Interface Module,	\$1,125.00 each
9.17 2070-9 Optional back cover for NEMA 2070 (2070-8).	\$44.00 each
10. Eagle EPAC 3108 M52	\$2,275.00 each



## 11. TAKE AN ADDITIONAL 15% OF ALL OTHER RELATED ITEMS LIST PRICE

## APPROVED RELATED ITEMS

PRODUCT NUMER	PRODUCT DESCRIPTION	LIST PRICE
EPAC3608M52	TS2 TYPE 2 8PH,25 MHZ CNTRLR W/MSA, MSB, MSC CONN, SDLC, 15P, RS232 25P, "D" CONN 37P, FSK 9P, INFRARED AND ETHERNET PORT	\$2,300.00
EPAC3668M52	<b>NTCIP</b> TS2 TYPE 2 8PH,25 MHZ CNTRLR W/MSA, MSB, MSC CONN, SDLC, 15P, RS232 25P, "D" CONN 37P, FSK 9P, INFRARED AND ETHERNET PORT	\$2,400.00
ACP11841P001	MULTI MODE FIBER MODEM FOR EPAC3108M41 & M42	\$452.00
ACP14888P001	SINGLE MODE FIBER FOR EPAC3108M41 & M42	\$1,940.00
AAU14860P001	POCKET ACTRA	\$3,050.00
NEXT PAHASE	SIEMENS GARDNER CONTROLLER SOFTWARE	\$765.00
MARCNX SOFTWARE	MARCNX SOFTWARE	\$3,530.00
SUP001	VIDEO SUPPRESSOR PANEL WITH AC POWER	\$177.00

## SPECIFICATIONS

## 1. Scope:

This specification sets the minimum requirements for the purchase of Intelligent Transportation Systems (ITS) Advanced Transportation Controller (ATC), type 2070. The ATC 2070 is a general-purpose field computer that is intended for continuous unattended operation in harsh environments. The ATC 2070 provides an open architecture hardware and software platform for a wide variety of ITS applications.

## 2. References:

- 2.1. "ATC 2070 – Advanced Transportation Controller (ATC) Standard for Type 2070 Controller" is currently a draft standard from AASHTO / ITE / NEMA. (The draft is currently available at [http://www.ite.org/standards/atc/ATC\\_2070Standard.pdf](http://www.ite.org/standards/atc/ATC_2070Standard.pdf)) When approved, the ATC 2070 will become "ITE 9603-3 Advanced Transportation Controller (ATC)". See the USDOT ITS standard fact sheet at [http://its-standards.net/Documents/ITE\\_9603-3.pdf](http://its-standards.net/Documents/ITE_9603-3.pdf) ( Note: Only draft standards may be available on the internet. Published standards are available from ITE and other sources. Standards may not be available after the comment period and before they have been published. Contact Ed Booth, 801-887-3710 of Utah DOT, Traffic Operations Center, if final and draft standards are not available. )
- 2.2. "API – Application Program Interface Standard for ATC" is currently a draft standard from AASHTO / ITE / NEMA. (The draft is currently available at <http://www.ite.org/standards/atc/atcapi.doc>) It provides an open hardware / software architecture interface. When approved, the API standard will become "ITE 9603-1 Advanced Transportation Controller (ATC) – Application Programming Interface (API)." See the USDOT ITS standard fact sheet at <http://its-standards.net/Documents/ITE%209603-1.pdf> .
- 2.3. Agency – For this document and related documents, the Agency shall refer to Utah Department of Transportation.

## 3. Requirements:

- 3.1. The ATC 2070 controller shall conform to the ITE ATC 2070 standard or draft standard. Where there are changes in the draft standard, the vendor shall make a best effort to manufacturer to the most recent revision of the standard. Where differences occur between the standard and this specification, this specification shall govern.



- 3.2. The ATC 2070 shall be configured to one of the hardware options described in ¶ 4. It shall be supplied with the software and firmware described in the ATC 2070 standard.
- 3.3. The ATC 2070 shall be provided as a complete assembly with all of the modules installed into the unit chassis. The operating system with any purchased software and hardware modules shall be installed. Where modules are not installed, cover plates shall cover the opening to provide for proper ventilation and dust control.
- 3.4. The ATC 2070 shall include the API software interface module (Refer to ¶ 2.2). The API shall be licensed for use on the ATC 2070 without additional fees.
  - 3.4.1. There shall be an API interface documentation manual describing the installation procedure and each of the available functions. (Refer to ¶ 2.2 ). The API manual should be delivered with the API module.
  - 3.4.2. The API software and documentation may be delivered up to 6 months after the API standard has been approved.
  - 3.4.3. Updates to the API shall be provided without cost during the warranty period.
- 3.5. A backup copy of the operating system and all other supplied software shall be provided. There shall be utilities to restore (emergency recovery) all software, including the operating system, to the ATC 2070. The software shall be restored from a technician's laptop computer or equivalent. The technician's computer is currently a Pentium MMX, 266 MHz, running Windows 95. The restoration program should be able to run on this system and all subsequent versions of Microsoft Windows. The computer has a 100baseT port and a serial port for communications.
- 3.6. The ATC 2070 shall be packaged one (1) system to a shipping box. The components include the ATC 2070, data keys, cables, documentation, backup (emergency recovery) software, utilities, etc. The box shall be labeled with a name consistent with the system configuration name (See ¶ 4). The box shall be labeled with the operating system revision designation and the API revision designation (when installed).
- 3.7. The ATC 2070 shall be warranted for a minimum of three years from date of delivery, or for one year from time of installation, whichever is longer.
  - 3.7.1. The period of warranty coverage shall not be less than the manufacturers usual and customary warranty period.
  - 3.7.2. The agency, or the manufacturer's representative, may make minor warranty repairs with the consent of the manufacturer. The manufacturer will make all other warranty repairs. The vendor will bear all costs including labor, parts, and shipping charges.
  - 3.7.3. Revisions, updates and new releases of the operating system, furnished software, and firmware shall be provided during the warranty period without additional costs. With the consent of the manufacturer, the agency shall assume responsibility for installation of updates to systems that have been in use for more than 30 days.
- 3.8. The vendor shall provide telephone customer support as required during normal business hours, at no cost during the warranty period.
- 3.9. The vendor shall be able to provide the necessary replacement products to maintain the operability of the system for a period of 5 years after purchase.
- 3.10. The vendor shall provide two bound copies of the documentation with the first 25 (each) ATC 2070's. Additional ATC 2070 controllers shall have one bound copy of the documentation. At a minimum, each documentation copy shall have the equivalent of the following:
  - 3.10.1. The documentation required in the ATC 2070 standard (¶ 2.1).



3.10.2. A user's manual shall have instructions on the use of all of the operating system commands. This shall describe each available command, with its function, format, options, and parameters.

3.10.3. The maintenance manual shall include a test procedure and utilities to verify the operation of all components.

#### **4. ITS Controller: Type ATC 2070 Configurations:**

The 2070 units shall normally be ordered in one the following configurations: (These configurations vary from the ATC standard.)

4.1. The **ATC 2070L** is without a VME bus and to be used in 170 type cabinets. It shall be configured with:

- 4.1.1. 2070 Unit Chassis,
- 4.1.2. 2070-1B CPU Module with a minimum of 8 megabyte flash memory,
- 4.1.3. 2070-2A Field I/O Module (FI/O For 170 Cabinets),
- 4.1.4. 2070-3B Front Panel Module, 8x40 character display with keyboard,
- 4.1.5. 2070-4A Power Supply Module, 10 Amp,
- 4.1.6. 2070-7A Dual Async Serial Comm, RS-232, DB-9S.

4.2. The **ATC 2070LC** is without a VME bus and to be used in ITS or TS-2 cabinets. It shall be configured with:

- 4.2.1. 2070 Unit Chassis,
- 4.2.2. 2070-1B CPU Module with a minimum of 8 megabyte flash memory,
- 4.2.3. 2070-2B Field I/O Module (ITS & NEMA Cabinets),
- 4.2.4. 2070-3B Front Panel Module, 8x40 character display with keyboard,
- 4.2.5. 2070-4A Power Supply Module, 10 Amp,
- 4.2.6. 2070-7A Dual Async Serial Comm, RS-232, DB-9S,

4.3. The **ATC 2070LCN** is without a VME bus and is to be used in TS-1 cabinets. It shall be configured with:

- 4.3.1. 2070 Unit Chassis,
- 4.3.2. 2070-1B CPU Module with a minimum of 8 megabyte flash memory,
- 4.3.3. 2070-2B Field I/O Module (ITS & NEMA Cabinets),
- 4.3.4. 2070-3B Front Panel Module, 8x40 character display with keyboard,
- 4.3.5. 2070-4A Power Supply Module, 10 Amp,
- 4.3.6. 2070-7A Dual Async Serial Comm, RS-232, DB-9S,
- 4.3.7. 2070-8 NEMA Field I/O,
- 4.3.8. 2070-9 2070N Backcover.

4.4. The **ATC 2070** is with a VME bus and to be used in ITS or TS-2 cabinets. It shall be configured with:

- 4.4.1. 2070 Unit Chassis,
- 4.4.2. 2070-1A CPU Module with a minimum of 8 megabyte flash memory,
- 4.4.3. 2070-5 VME cage assembly
- 4.4.4. 2070-2B Field I/O Module (ITS & NEMA Cabinets),
- 4.4.5. 2070-3B Front Panel Module, 8x40 character display with keyboard,
- 4.4.6. 2070-4A Power Supply Module, 10 Amp,
- 4.4.7. 2070-7A Dual Async Serial Comm, RS-232, DB-9S.

#### **5. ITS Controller: Type ATC 2070 Modules**

The 2070 modules shall be available as individual modules. At a minimum, all of the following ATC 2070 modules shall be available:

- 5.1. 2070 Unit Chassis,
- 5.2. 2070-1A CPU Module (multiple board) with VME interface and a minimum of 8 megabyte flash memory,
- 5.3. 2070-1B CPU Module (single board / light version) with Ethernet port and a minimum of 8 megabyte flash memory,



- 5.4. 2070-2A Field I/O Module with parallel inputs and outputs (for 170 Cabinets),
- 5.5. 2070-2B Field I/O Module with serial bus communications (for ITS & NEMA Cabinets),
- 5.6. 2070-3B Front Panel Module, 8x40 character display with keyboard and serial connectors,
- 5.7. 2070-3C Front Panel Module, with serial connectors, without display or keyboard,
- 5.8. 2070-4A Power Supply Module, 10 Amp,
- 5.9. 2070-5A VME Cage Assembly and installation kit,
- 5.10. 2070-5B Mounting Assembly for MCB (2070 -1A),
- 5.11. 2070-6A Dual Async/Modem Serial Comm, 300-1200 Baud FSK,
- 5.12. 2070-6B Dual Async/Modem Serial Comm, 9600 Baud FSK,
- 5.13. 2070-7A Dual Async Serial Comm, RS-232, DB-9S,
- 5.14. 2070-7B Dual Async Serial Comm, RS-485, DB-15S,
- 5.15. 2070-8 NEMA Interface Module,
- 5.16. 2070-9 Optional back cover for NEMA 2070 (2070-8).

## **6. Method of Measurement**

- 6.1. The ATC 2070 and/or 2070 Modules will be measured as a unit, each delivered as directed by the agency.

## **7. Basis of Payment**

- 7.1. The ATC 2070 and/or 2070 modules, measured as provided above, will be paid for at the contract unit price of each, which price shall be payment in full furnishing the complete 2070 Controller Unit, including all labor, tools, equipment, transportation, and incidentals necessary.

## **8. Cabinets**

There is a separate purchase specification for ITS cabinets. Cabinets (other than included in the ATC 2070 standard) are not included in this specification.

## **9. ATC Application Software:**

Application software is not included in this specification; however the state will consider purchasing currently available ATC application software. Application software and bundled packages of hardware and software may be offered as options.

- 9.1. Applications that could be of interest to the agency are not limited to the following:

- 9.1.1. Air Quality Monitoring
- 9.1.2. Automatic Vehicle Identification
- 9.1.3. CCTV Cameras, Control and/or Video Compression
- 9.1.4. Communications
- 9.1.5. Freeway Lane Control
- 9.1.6. High Occupancy Vehicle
- 9.1.7. Highway Advisory Radio
- 9.1.8. Highway Rail Intersections
- 9.1.9. Incident Management
- 9.1.10. Programmable Logic Controller (PLC) Emulation
- 9.1.11. Port of Entry Automation
- 9.1.12. Ramp Meter
- 9.1.13. Roadway Condition and Image Thermometry
- 9.1.14. Roadway Weather Information Systems
- 9.1.15. Speed, Volume, Occupancy Monitoring
- 9.1.16. Traffic Signal
- 9.1.17. Traffic Surveillance
- 9.1.18. Traveler Information
- 9.1.19. Variable and Changeable Message Signs



9.1.20. Weigh in Motion

9.2. The following constraints should apply to all applications:

- 9.2.1. Applications shall run on an ATC 2070 in a real-time multitasking environment.
- 9.2.2. Applications should use the ATC API to interface to external devices and processes.
- 9.2.3. Applications shall initialize and execute at an unattended remote site, recovering from faults whenever possible.
- 9.2.4. Applications shall communicate using NTCIP, if specified. Proprietary data communication structures shall only be used when a function cannot be accomplished using NTCIP.
- 9.2.5. Applications shall function independent of communications status and mode, but shall be fully controllable using NTCIP.
- 9.2.6. There shall be adequate displays to configure and show the program and hardware status of internal and external devices from the front panel.
- 9.2.7. There shall be adequate diagnostics to troubleshoot any possible problems.
- 9.2.8. There shall be a log file to review historical events.
- 9.2.9. There shall be a laptop interface program to exercise and interrogate the application using the local ETHERNET, serial communications and/or modem port.

9.3. Method of Measurement:

- 9.3.1. The ATC 2070 Application Software will be measured per individual license, each delivered as directed by the agency.

9.4. Basis of Payment

- 9.4.1. The ATC 2070 Application Software, measured as provided above, will be paid for at the contract unit price of each license, which price shall be payment in full furnishing the application software, including all software documentation transportation, and incidentals necessary.

**FINET COMMODITY CODE(S):** For Agency use only

55080000000 – TRAFFIC CONTROLS AND EQUIPEMENT, ELECTRICAL SYSTEMS

55081000000 – TRAFFIC CONTROLS AND EQUIPMENT, ELECTRIC PARTS

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**REVISION HISTORY:**

Revision #1: Updated contact information; new purchasing agent.

Revision #2: Ordering address updated.

Revision #3: Price updates; contract extended through 7/08/2008.